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AUTHOR Besson, R.
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ABSTRACT

The paper reports on the development of videotex services appropriate for the communication needs of hearing-impaired and speech-impaired persons in France. The videotex service, called TELETEL, serves 3.8 million business and home users with approximately 8,500 services through the public telephone network and packet switching network. TELETEL services include access to the MINITEL data base. Uses of MINITEL by persons suffering from a hearing or speech impairment include communication by means of text messages, utilizing the information services of MINITEL, or utilizing special services made available on the system by regional organizations and associations of disabled users. Although deaf users have positive reactions of MINITEL, only 15% of the deaf population are users due to such reasons as lack of information and fear of technology. Improved services and equipment as well as lower costs are needed to provide more complete access to videotex services for the disabled in France. (DB)

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"THE USE OF MINITEL BY THE DEAF POPULATION, FOR COMMUNICATION, PUBLIC INFORMATION SERVICES"

R. BESSON

CENTRE NATIONAL D'ETUDES DES TELECOMMUNICATIONS
B.P. 40 22301 LANNION FRANCE

INTRODUCTION

Until 1986, persons suffering from a hearing or speech impairment needed a device acoustically coupled in order to carry out a normal telephone conversation. This system was unsatisfactory, due to the fact that it was only possible to communicate with users equipped with similar equipment and within a defined environment, thus in a "closed" communication mode. With the arrival of VIDEOTEX, and the distribution of hundreds of thousands of terminals, thus providing nationwide coverage, it was possible to foresee how disabled persons could avail of this extraordinary opportunity. By adapting the terminals which have access to a data base, in order to create interactive dialogue, it would be possible to enable persons with a hearing or speech impairment to communicate freely, in an "open" system. TELETEL'S development in France was going to enhance these possibilities.

VIDEOTEX IN FRANCE

B.1. General description

VIDEOTEX is an everyday reality in France for 3.8 million business and home users. It is also an economic reality for thousands of professionals in the telematic world.

The TELETEL service has been in existence for 8 years, thus the result of a long experience.

The terminal used for access to the data base is called MINITEL. It is easy to use, distributed free of charge, and replaces the paper telephone directories.

Users have access to approximately 8.500 services, through the public telephone network and the packet switching network. This is the equivalent of about 6 million hours of traffic per month.

The Electronic Directory, one of the most important services, receives 17 % of calls made. The first 3 minutes of the call are free of charge.

KIOSK services allow service providers to be paid for use of their services without the trouble and cost of subscriptions, thus enhancing the development of the public service.

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B.2. Teletel services

Electronic directory service

With Minitel, it is possible to obtain the addresses and telephone numbers of subscribers (24 million), on a round the clock basis, in metropolitain France and in the overseas departments. Professional and business information is also available (yellow pages) as well as information about other French P and T services.

Other services

TELETEL offers a wide variety of services both for the general public and business users.

B.3. The terminals

The range includes :

A basic terminal : the Minitel 1 (M1) and the Minitel 1B (dualstandard).
Teletel 40 columns, ASCII 80 columns.
This terminal is distributed free of charge.

The Minitel "Dialogue" (M1D), designed for persons with communication problems.
The rental cost of a terminal is 1,7 dollar per month.

Among the other Minitel terminals available on rental terms, there is the :

* Minitel 10 - M1 + a built-in electronic telephone set.
* Minitel 12 - MI B + built-in electronic telephone set + additional telematic functions.
* Colour Minitel.

Other TELETEL terminals :

* Minitel peripheral devices

  Smart card reader
  Printers

  Minitels outside France

* Minitel emulation by personal computer.

C - USE OF MINITEL BY PERSONS SUFFERING FROM A HEARING OR SPEECH IMPAIRMENT

At this point, we would like to present the use of Minitel by persons suffering from a hearing impairment. However, it is obvious that persons suffering from a speech impairment may also avail of this terminal.

C.1. Communication by means of text messages

There are four possibilities open to disabled users of Minitel in order to make a telephone call.

1. With the M1D through the public telephone network

The M1D is identical to the basic Minitel to which special functions have been added. These functions enable either all text or alternate text/voice communication with any other Minitel user.

The M1D enables off-line preparation of a text message (about 1000 Characters) and its automatic transmission once the correspondent has been called. Screen displays indicate progress in call establishment and when the call is terminated.

The MID was made available to users in May 1986. There are 10.000 sets currently in use. The present distribution rate is approximately 400 per month. The call charging rate is the same as the standard telephone rate with the same reductions as for off-peak hours.

2. Calling the "36 18"

With any type of Minitel, it is possible to have access to a host computer (the call number is 3618) which automatically calls the correspondent (who is also equipped with a Minitel) and enables the exchange of text messages in an interactive mode.

For example, the charge of a 8' call is 1 dollar. The reductions are the same as for off-peak periods for the telephone. (On average 6000 calls per month are made).

3. Electronic mail (message services)

By dialling a number and using a confidential code, messages can be sent or received through the mailbox system (Mailbox, Direct conversation, Conference).

For example : by using a message service, deaf persons in France are able to communicate with deaf persons in Gallaudet College U.S.A. These mailbox systems are generally created by the deaf users.

4. A telephone exchange for the deaf

In the Paris region. an exchange operated by the P and T (French Telecom) enable messages to be transmitted between deaf users and persons not equipped with Minitel. These exchanges are staffed by special operators.

C.2. Information services

Deaf users can obviously have access to the Teletel services mentioned above by using the Minitel. Real-time access to a wide range of information is a considerable time saving and labour saving asset.

C.3. Special services

Regional organisations and associations of disabled users have helped in creating a variety of special services which include the following :

* emergency number access : fire station, police station. This service operates in the Paris region.
* SOS service in the Savoie region (fire station, doctors, hospitals).
* a taxi service available on Minitel.
* telegrams sent by Minitel.
* administrative information centers.
* transport information center.

C.4. Deaf users opinions of Minitel

The MID is now considered by deaf users as a means of communication comparable to that of the telephone. Its main advantage resides in the fact that it enables direct communication not only with other deaf users but also with persons of normal hearing.

The different mailbox systems are also seen in a positive light.

Despite the obvious advantages, Minitel is not yet used by the entire deaf population (only 15 % of deaf currently use Minitel).

The reasons for this are as follows :

* the entire deaf population have not been informed of the existence of such a service. This is due to the fact that they do not all belong to regional organisations and are therefore not easily contactable.
* fear of using sophisticated new material is another reason (especially with the older population).
* certain deaf persons having difficulties in written expression are reticient to be exposed to ridicule.
* and above all, the cost of calls is an important factor which has delayed the widespread development of Minitel among deaf users.

C.5. Evolution

Surveys are currently being carried out, which will obtain information as to how the new basic Minitel will be developed in the future. These surveys take into account remarks made by disabled users.

A new Minitel, the M5, which has a flat screen and is portable is currently under study. It will be experimented for text communication with deaf users outside the home.

However, its advantages will decrease as more and more Minitels come into operation.

The introduction of public payphones using an phone card for MID is also under study.

* The possibility of calling certain "Text Telephones" abroad exists also. (Belgium, Netherlands, U.K., Finland through the electronic mail).

D - CONCLUSION - REMARKS

Minitel has revolutionized the life of deaf users in the past decade. Remarks made demonstrate how this has been achieved :

Minitel has helped "to create an outlet to the outside world" and to give users "a new lease of life".

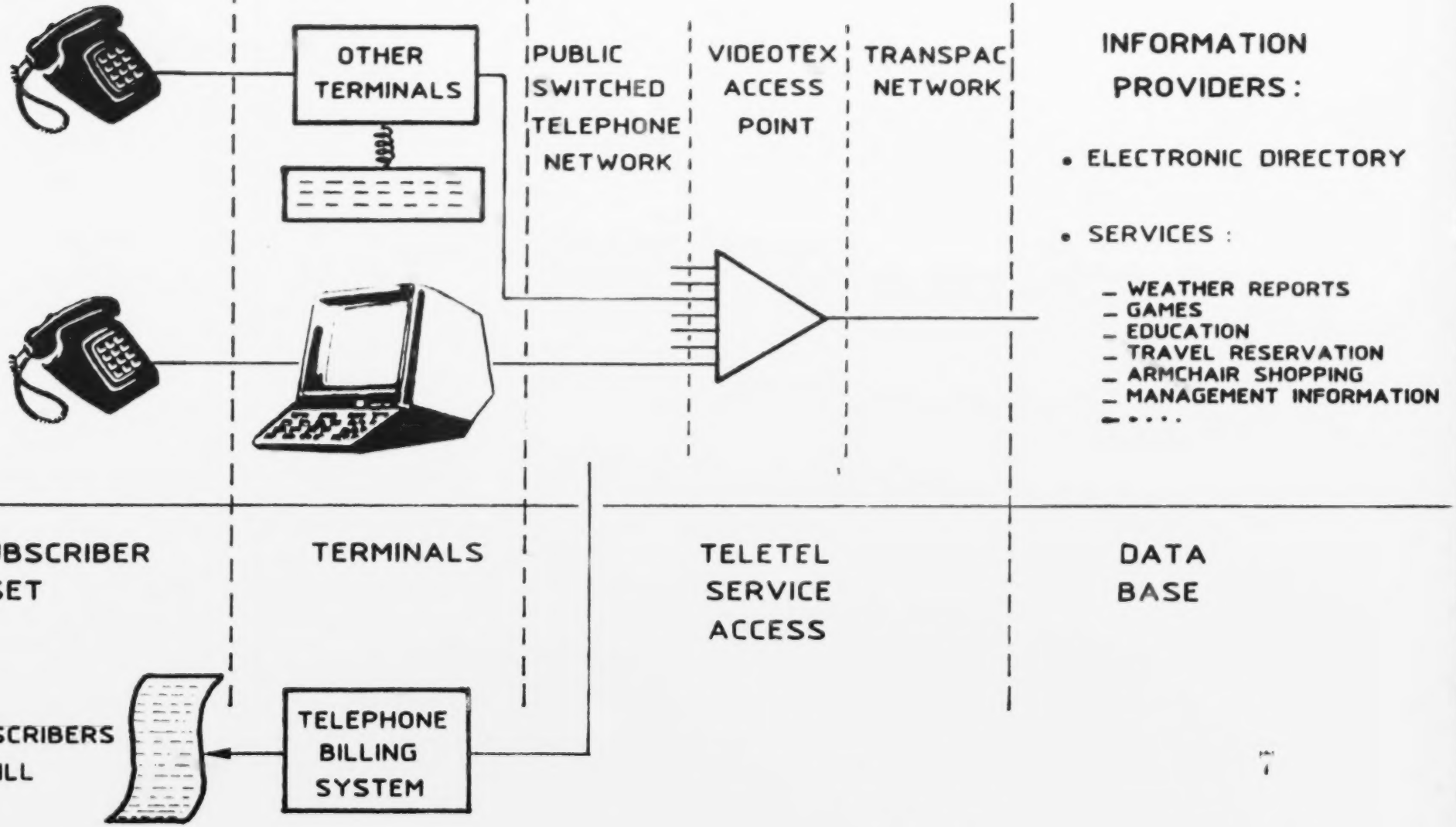
People with a hearing impairment now have the same access to Directory Enquiries as normally hearing persons. The majority of deaf users firmly believe that Minitel has increased the amount of information to which they are exposed. It has also helped in improving their writing skills (spelling, etc).

However, one fundamental problem remains the high cost of calls.

Finally, in conclusion, two remarks are worth mentioning :

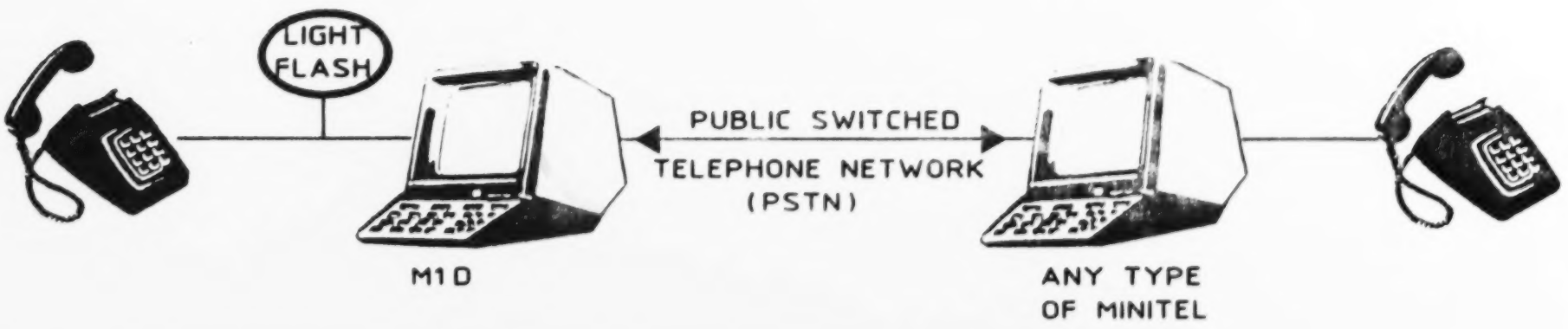
* the MID is used by only a very few persons suffering from a speech impairment. The reasons for this are unknown.
* Minitels advantages for disabled persons are not limited to deaf users. Persons suffering from motoric disability can also have access to the vocal telephone system. Blind persons have access to TELETEL services by linking up a speech synthesis generator and a Braille generator.

TELETEL SERVICE ACCESS DIAGRAM



COMMUNICATION BY MEANS OF TEXT MESSAGES ON MINITEL

1) WITH MID



2) WITH THE "3618"